

2 The Pellagra Story



Scientists have common approaches to solving problems. Usually, people think of experiments as one way scientists investigate problems. What kinds of experiments are possible when you study human beings? How can you collect evidence in these situations? Begin to consider these issues as you watch the story of the disease called pellagra (puh-LAY-gra), which affected poor rural families of the South.



Whenever you see this icon, it means that you will find more information or a technology extension on this subject on the SALI page of the SEPUP website.

CHALLENGE

What are the common elements shared by all scientific problem-solving methods? How is science used to study people?

PROCEDURE

1. In order to prepare to watch the story on the video, first read Analysis Questions 1–4.
2. Your teacher will provide you with a student sheet or ask you to prepare a table like Table 1 on the next page to record your notes during the video.
3. Watch the story of pellagra on the video, *A Science Odyssey: "Matters of Life and Death."*

Table 1: Notes on The Pellagra Story

What was the problem of pellagra?

What did people think caused pellagra?

1.

2.

3.

4.

What evidence did Dr. Goldberger observe or collect about pellagra?

What did Dr. Goldberger conclude about the cause of pellagra?

ANALYSIS

1. a. What was the first step in Dr. Goldberger's research into pellagra? Explain why this step was important in developing his hypothesis.

b. During this first step in his research, what evidence did Dr. Goldberger find that suggested that pellagra was not caused by germs?

2. a. What was Dr. Goldberger's hypothesis about the cause of pellagra?



b. What did he do to provide evidence of the relationship between pellagra and nutrition? Be sure to explain *how* his research provided evidence that supported or disproved his hypothesis.

c. How could he have provided more convincing evidence of the relationship between pellagra and nutrition?



3. Why didn't people believe Dr. Goldberger's conclusion about the cause of pellagra? Give two reasons.



4. Compare the steps of the traditional scientific method to the steps Dr. Goldberger followed to investigate pellagra. How were the steps the same? How were the steps different?



5. To investigate his hypothesis, Dr. Goldberger had prisoners volunteer to be fed a poor diet; as a result, 7 out of 11 prisoners developed pellagra. What do you think about Dr. Goldberger's decision to experiment on people? Support your answer with evidence and identify the trade-offs of your decision.

Hint: To write a complete answer, first state your opinion. Provide two or more pieces of evidence that support your opinion. Then consider all sides of the issue and identify the trade-offs of your decision.

6. **Reflection:** How do people in different careers solve problems? Scientists, plumbers, engineers, auto mechanics, nurses, teachers, and many other workers solve problems. Choose two careers that interest you. Describe the kind of problems you think people face in these careers. Describe how you think they solve them.